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(54) Terminal apparatus and method for achieving interactive operations

(57) A terminal apparatus is provided for displaying an image by reproducing a piece of image information and for interactively changing the image using navigation information. The image is a moving picture, a still picture, or a mixture of them. The image information and the navigation information together are broadcast by a broadcasting station to the terminal apparatus. The navigation information indicates a plurality pieces of link-target image information. The cache unit stores a pair of image information and navigation information. The reproducing unit reproduces the image information. The monitoring unit monitors whether an operator has performed a certain operation responding to the image displayed. The receiving unit, before the operator performs the certain operation, receives a plurality pieces of im-

age information which have possibility of being displayed and a plurality pieces of corresponding navigation information based on the navigation information, and stores the plurality pieces of image information and navigation information in the cache unit. The specifying unit specifies a piece of link-target image information based on the certain operation. The identifying unit identifies the piece of link-target image information as a piece of image information. The first controlling unit reads the piece of link-target image information and instructs the reproducing unit to reproduce the piece of link-target image information, and instructs the receiving unit to receive other plurality pieces of image information and navigation information based on a piece of navigation information corresponding to the link-target image information identified by the identifying unit.

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EUROPEAN SEARCH REPORT

Application Number
EP 97 30 6627

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	MEYER-BOUDNIK T ET AL: "MHEG EXPLAINED" IEEE MULTIMEDIA, vol. 2, no. 1, 21 March 1995 (1995-03-21), pages 26-38, XP000500084 ISSN: 1070-986X	1, 25, 33, 41, 43-45, 52	H04N7/173 H04N5/00 H04N7/16
A	* page 28, left-hand column, paragraph 3 - right-hand column, paragraph 4 * * page 32, right-hand column, paragraph 4 * * page 33, left-hand column, paragraph 6 - page 34, right-hand column, paragraph 1 * * page 35, right-hand column, paragraph 4 * * page 36, right-hand column, paragraph 7 *	42	
Y	--- PADMANABHAN V N ET AL: "USING PREDICTIVE PREFETCHING TO IMPROVE WORLD WIDE WEV LATENCY" COMPUTER COMMUNICATIONS REVIEW, vol. 26, no. 3, 1 July 1996 (1996-07-01), pages 22-36, XP000607179 ISSN: 0146-4833 * page 25, paragraph 4 - paragraph 5 * * page 26, paragraph 2 * * page 27, paragraph 2 - paragraph 3 * * figure 3 *	1, 25, 33, 41, 43-45, 52	TECHNICAL FIELDS SEARCHED (Int.Cl.6) H04N G06F
A	--- US 5 541 662 A (ADAMS ROBERT ET AL) 30 July 1996 (1996-07-30) * column 4, line 46 - line 65 * * column 5, line 39 - line 47 * * column 7, line 43 - column 8, line 23 * * column 8, line 64 - column 9, line 10 * --- -/-	1, 25, 33, 41-45, 52	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17 August 1999	Examiner Sindic, G
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 30 6627

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 477 786 A (INTELETEXT SYSTEMS INC) 1 April 1992 (1992-04-01) * column 8, line 46 - column 9, line 4 * * column 14, line 39 - line 49 * -----	1,25,33, 41-45,52	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17 August 1999	Examiner Sindic, G
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P01C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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17-08-1999

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5541662	A	30-07-1996	AU 3411595 A	26-04-1996
			EP 0783818 A	16-07-1997
			WO 9610888 A	11-04-1996
			US 5760838 A	02-06-1998
EP 0477786	A	01-04-1992	US 5093718 A	03-03-1992
			US 5220420 A	15-06-1993
			AU 643828 B	25-11-1993
			AU 8483891 A	02-04-1992
			CA 2052477 A,C	29-03-1992
			CN 1063593 A	12-08-1992
			CS 9102869 A	13-05-1992
			FI 914552 A	29-03-1992
			IL 99586 A	22-02-1998
			JP 6022315 A	28-01-1994
			NZ 239969 A	22-12-1994
			PT 99110 A	31-12-1993
			TR 25669 A	01-07-1993
			US 5526034 A	11-06-1996
			US 5594507 A	14-01-1997
			US 5442700 A	15-08-1995
			US 5485197 A	16-01-1996
			US 5557316 A	17-09-1996
			US 5550578 A	27-08-1996
			US 5587734 A	24-12-1996
			US 5883661 A	16-03-1993
			US 5412720 A	02-05-1995
			US 5361091 A	01-11-1994
			US 5319455 A	07-06-1994

EPO FORM P0459

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